

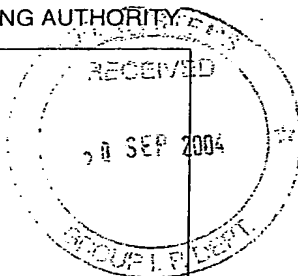
## PATENT COOPERATION TREATY

Rec'd PCT/PTO 16 DEC 2004

10/518237  
PCTFrom the  
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:

MUKHERJEE, A.  
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Group IP Dept.  
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GRANDE BRETAGNE

NOTIFICATION OF TRANSMITTAL OF  
THE INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT

(PCT Rule 71.1)

Date of mailing  
(day/month/year) 16.09.2004

Applicant's or agent's file reference  
XA1654

## IMPORTANT NOTIFICATION

International application No.  
PCT/GB 03/02552

International filing date (day/month/year)  
13.06.2003

Priority date (day/month/year)  
18.06.2002

Applicant  
BAE SYSTEMS PLC et al.

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

## 4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

The applicant's attention is drawn to Article 33(5), which provides that the criteria of novelty, inventive step and industrial applicability described in Article 33(2) to (4) merely serve the purposes of international preliminary examination and that "any Contracting State may apply additional or different criteria for the purposes of deciding whether, in that State, the claimed inventions is patentable or not" (see also Article 27(5)). Such additional criteria may relate, for example, to exemptions from patentability, requirements for enabling disclosure, clarity and support for the claims.

Name and mailing address of the international  
preliminary examining authority:



European Patent Office  
D-80298 Munich  
Tel. +49 89 2399 - 0 Tx: 523656 epmu d  
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## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference XA1654	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/GB 03/02552	International filing date ( <i>day/month/year</i> ) 13.06.2003	Priority date ( <i>day/month/year</i> ) 18.06.2002
International Patent Classification (IPC) or both national classification and IPC H01Q3/26		
Applicant BAE SYSTEMS PLC et al.		
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 7 sheets, including this cover sheet.</p> <p><input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of 3 sheets.</p>		
<p>3. This report contains indications relating to the following items:</p> <p>I <input checked="" type="checkbox"/> Basis of the opinion</p> <p>II <input type="checkbox"/> Priority</p> <p>III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p>IV <input checked="" type="checkbox"/> Lack of unity of invention</p> <p>V <input checked="" type="checkbox"/> Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p>VI <input type="checkbox"/> Certain documents cited</p> <p>VII <input type="checkbox"/> Certain defects in the international application</p> <p>VIII <input type="checkbox"/> Certain observations on the international application</p>		
Date of submission of the demand  18.12.2003	Date of completion of this report  16.09.2004	
Name and mailing address of the international preliminary examining authority:   European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer  Jäschke, H  Telephone No. +49 89 2399-7139 	

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/GB 03/02552

**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

**Description, Pages**

1-16 as originally filed

**Claims, Numbers**

1-22 received on 02.09.2004 with letter of 02.09.2004

**Drawings, Sheets**

1-4 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. **PCT/GB 03/02552**

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**IV. Lack of unity of invention**

1. In response to the invitation to restrict or pay additional fees, the applicant has:

- ☐ restricted the claims.  
☒ paid additional fees.  
☐ paid additional fees under protest.  
☐ neither restricted nor paid additional fees.

2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is

- ☐ complied with.  
☒ not complied with for the following reasons:

**see separate sheet**

4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:

- ☐ all parts.  
☒ the parts relating to claims Nos. 1-9 .

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes: Claims	
	No: Claims	1-9
Inventive step (IS)	Yes: Claims	
	No: Claims	1-9
Industrial applicability (IA)	Yes: Claims	1-9
	No: Claims	

2. Citations and explanations

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/GB 03/02552

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see separate sheet

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB 03/02552

Reference is made to the following documents:

- D11: XP000830201; "MULTIFUNCTION WIDE-BAND ARRAY DESIGN"; IEEE TRANSACTIONS ON ANTENNAS AND PROPAGATION, IEEE INC. NEW YORK, US; HEMMI C
- D12: XP010504536; "Overview of advanced multifunction RF system (AMRFS)"; Phased Array Systems and Technology, 2000. Proceedings. 2000 IEEE International Conference on Dana Point, CA, USA 21-25 May 2000, Piscataway, NJ, USA, IEEE, US; Hughes P K, Choe J Y

The documents D11, D12 were cited by the applicant.

**Re Item IV**

**Lack of unity of invention**

The application lacks unity (Rule 13.1 PCT).

As explained in Re Item V paragraph 1, the subject matter of claim 1 is not new and therefore claim 1 cannot define the common inventive concept linking together the dependent claims.

Among the dependent claims the following main groups can be identified:

- I. Organisation of the Antenna elements into a hierarchic structure  
Claims 1-2: Setting out first and second order groups.
- II. Beamforming  
Claims 3 - 9: Specification of a two stage beam forming network..
- III. Antenna elements  
Claims 10, 11: Antenna elements with two polarisations.
- IV. Receiver  
Claim 12: Defining independent receivers.
- V. Electronic surveillance measures  
Claims 13-16: A second parallel system using the same set of antennas for electronic surveillance measures.

VI. Systems

Claim 17 - 20: Integration of antennas into systems.

Consequently, the different groups solve different problems and contain entirely separate and different features which by no means can be said to define corresponding special technical features or any common inventive concept.

Claims 21 and 22 do not meet the requirement of Art. 6 PCT since they do not disclose any technical feature.

**Re Item V**

**Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 is not new in the sense of Article 33(2) PCT.

The document D12 discloses (the references in parentheses applying to this document):

*An antenna comprising a plurality of antenna elements (D12, page 21), the antenna being operable with sets of the antenna elements organized into first order groups (D12, page 21, paragraph 3, "subarrays") and with sets of first order groups organized into sets of second order groups (D12, page 21, paragraph 3, related to "sections" used for a "function"; Fig. 1), the antenna further comprising a controller (Fig. 2, "resource allocation manager") operable to reconfigure dynamically the organisation of first order groups into second order groups (D12, page 21, paragraph 2 and 3; Fig. 1).*

2. Dependent claims 2-9 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and inventive step, see document D12 (page 21; Fig. 1 and especially Fig. 3).
3. Further minor defects in the international application:
  - 3.a. Claim 1 does not meet the requirements of Rule 6.3(b) PCT, whereby the independent claims should be properly cast in the two part form, with those features part of the prior art being placed in the preamble (Rule 6.3(b)(i) PCT)

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

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International application No. PCT/GB 03/02552

and the subject-matter, for which protection is sought, being placed in the characterising portion (Rule 6.3(b)(ii) PCT).

- 3.b. Claim 1-9 do not meet the requirements of Rule 6.2 (b) PCT, whereby technical features mentioned in the claims should be provided with reference signs in parentheses. This applies to both the preamble and the characterising portion.
- 3.c. The present application does not meet the requirements of Rule 9.1 (iv) PCT, since it contains obviously unnecessary statement in the description as on page 16, lines 10-12.